ABSTRACT

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Title of Diploma Thesis: HPLC for astaxanthine analysis in food supplements

A new HPLC method was optimized and validated to determine astaxanthin and other carotenoids: lutein, beta-carotene and canthaxanthin. This method was used for determination of these analytes in selected dietary supplements: Omega Complete Super (Jamieson), KRILOIL (Life Science) a Krilovy olej strong (Vieste). The separation was performed with Ascentis Express RP-amide column (100 x 4.6 mm, 5 µm) Supelco Analytical. A mobile phase consisted of acetonitrile and mixture of methanol/dichloromethane (1:1) using gradient elution and flow rate 1 ml/min. The analytes were detected with DAD detector at wavelength 470 nm.

This method was found unsuitable to determine astaxanthin in the dietary supplements, which contained esterified form of the carotenoid. The method was developed to determine a free fraction of the substance, which could not be extracted. Therefore, an alternative spectrophotometric method was developed to determine astaxanthin in dietary supplements using HPLC system without chromatography column.